REPLACED BY ART 34 AMDT

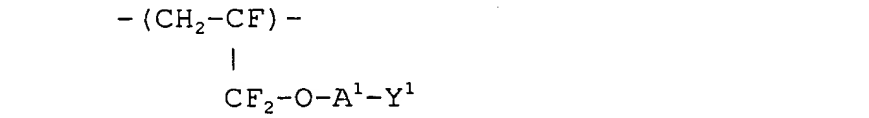
CLAIMS

1. A fluorine-containing allyl ether polymer having a number average molecular weight of 1,000 to 1,000,000 and consisting of chains of at least one repeating unit of the formula:

(1)

wherein A is an organic group having 1 to 100 carbon atoms.

2. The fluorine-containing allyl ether polymer according to claim 1, wherein at least one of the repeating units is a repeating unit of the formula:



(2)

wherein A^1 is a divalent organic group having 1 to 60 carbon atoms, and Y^1 is $-CH_2OH$, $-COOH$, $-COOR^1$ in which R^1 is a hydrocarbon group having 1 to 20 carbon atoms, $-CON<^{R^2}_{R^3}$ in which R^2 and R^3 are the same or different and a hydrogen atom or a hydrocarbon group having 1 to 20 carbon atoms, $-O-CF=CF_2$, or $-OCO-CZ^3=CZ^1Z^2$ in which Z^1 and Z^2 are the same or different and a hydrogen atom or a fluorine atom, and Z^3 is a hydrogen atom, a fluorine atom, a chlorine atom or a trifluoromethyl group.

3. The fluorine-containing allyl ether polymer according to claim 2, wherein A^1 in the formula (2) is a fluoroalkylene group having 1 to 60 carbon atoms or a fluoroalkylene group having an ether bond and 1 to 60 carbon atoms.

4. The fluorine-containing allyl ether polymer according to claim 1, wherein at least one of the repeating units is a repeating unit of the formula:

$$-CH_2-CF-$$
$$|$$
$$CF_2O-(CF_2O)_x-(CF_2CF_2O)_y-(CX^1{}_2CF_2CF_2O)_z-(CFX^2CF_2O)_w-CFX^3-Y^2 \quad (3)$$

wherein X^1 is a hydrogen atom, a fluorine atom or a chlorine atom, X^2 is a hydrogen atom, a chlorine atom, a methyl group or a trifluoromethyl group, X^3 is a hydrogen atom, a fluorine atom, a chlorine atom or a trifluoromethyl group, x, y, z and w are the same or different and a number of 0 to 20 provided that the sum of x, y, z and w is from 1 to 20, and Y^2 is -COOH, $-COOR^4$ in which R^4 is a hydrocarbon group having 1 to 20 carbon atoms, $-CH_2OH$, $-CON<^{R^5}_{R^6}$ in which R^5 and R^6 are the same or different and a hydrogen atom or a hydrocarbon group having 1 to 20 carbon atoms, $-O-CF=CF_2$, or $-OCO-CZ^6=CZ^4Z^5$ in which Z^4 and Z^5 are the same or different and a hydrogen atom or a fluorine atom, and Z^6 is a hydrogen atom, a fluorine atom, a chlorine atom or a trifluoromethyl group.

5. A fluorine-containing allyl ether polymer represented by the formula:

$$CH_2=CFCF_2O-(CF_2O)_x-(CF_2CF_2O)_y-(CX^1{}_2CF_2CF_2O)_z-(CFX^2CF_2O)_w-CFX^3-R \quad (4)$$

wherein X^1 is a hydrogen atom, a fluorine atom or a chlorine atom, X^2 is a hydrogen atom, a chlorine atom, a methyl group or a trifluoromethyl group, X^3 is a hydrogen atom, a fluorine atom, a chlorine atom or a trifluoromethyl group, x, y, z and w are the same or different and a number of 0 to 20 provided that the sum of x, y, z and w is from 1 to 20, and R is -COOH, $-COOR^1$ in which R^1 is a hydrocarbon group having 1 to 20 carbon atoms, $-CH_2OH$, $-CONH_2$, $-CF=CF_2$, a hydrocarbon group having 1 to 20 carbon atoms or a perfluoroalkyl group having 1 to 20 carbon atoms.

6. The fluorine-containing allyl ether polymer according

to claim 5, which has a number average molecular weight of 1,000 to 1,000,000.